

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior listings and versions thereof.

Claim 1. (currently amended) High-temperature solid electrolyte fuel cell comprising an electrolyte layer between two electrode layers obtainable by a process comprising the steps:

- (i) applying electrolyte particles in a screen printing paste onto an unsintered electrolyte and sintering the thus produced structure,
- (ii) depositing a nano-porous electrode thin layer by a sol-gel-process or an MOD-process on the structure obtained according to step (i) and the thermal treatment of the thus coated structure,

wherein a paste comprising scandium doped zirconium dioxide or doped cerium oxide (yttrium, gadolinium or samarium doped) is used as screen printing paste the fuel cell further comprises an electrolyte boundary layer on the structured screen printed electrolyte layer obtained according to step (i), which electrolyte boundary layer is applied by an MOD-process and has a thickness of 100 to 500 nm.

Claim 2. (currently amended) High-temperature solid electrolyte fuel cell according to claim 1 wherein an electrolyte of yttrium or scandium doped ZrO₂ is used in step (i).

Claim 3. (cancelled).

Claim 4. (previously presented) High-temperature solid electrolyte fuel cell according to claim 1 wherein the screen printing paste has a solid content of 10 to 30 wt.-%.

Claim 5. (previously presented) High-temperature solid electrolyte fuel cell according to claim 1 wherein the granule size distribution of the powder fraction of the paste is in the range of 5 to 20 μ m.

Claim 6. (cancelled)

Claim 7. (previously presented) High-temperature solid electrolyte fuel cell according to claim 1 wherein a layer comprising strontium doped lanthanum cobaltate (LSC) $\text{La}_{0.50}\text{Sr}_{0.50}\text{CoO}_3$ is deposited in step (ii).

Claim 8. (previously presented) High-temperature solid electrolyte fuel cell according to claim 1 wherein a layer comprising substochiometric strontium doped lanthanum manganate (ULSM) $\text{La}_{0.75}\text{Sr}_{0.20}\text{MnO}_3$ is deposited in step (ii).

Claim 9. (previously presented) High-temperature solid electrolyte fuel cell according to claim 7 wherein the solid content of the LSC coating solution is 12-14 mass %.

Claim 10. (currently amended) A process to provide a fuel cell comprising:
(i) applying electrolyte particles in a screen printing paste onto an unsintered electrolyte and sintering the thus produced structure,
(ii) depositing a nano-porous electrode thin layer by a sol-gel-process or an MOD-process on the structure obtained according to step (i) and the thermal treatment of the thus coated structure,

wherein a paste comprising scandium doped zirconium dioxide or doped cerium oxide (yttrium, gadolinium or samarium doped) is used as screen printing paste the fuel cell comprises an electrolyte boundary layer on the structured screen printed electrolyte layer obtained according to step (i), which electrolyte boundary layer is applied by an MOD-process and has a thickness of 100 to 500 nm.

Claim 11. (previously presented) High-temperature solid electrolyte fuel cell according to claim 8 wherein the solid content of the ULSM coating solutions is 12-14 mass %.